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RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/876,348ADATE: 08/15/2001  
TIME: 14:16:16Input Set : A:\Rb125seq.txt  
Output Set: N:\CRF3\08152001\I876348A.raw

ENTERED

3 <110> APPLICANT: Horwath, K. L. and Myers, K. L.  
5 <120> TITLE OF INVENTION: Nucleic Acid Sequences Encoding Type III Tenebrio  
6 Antifreeze Proteins and Method for Assaying Activity.  
8 <130> FILE REFERENCE: RB-125-RI  
10 <140> CURRENT APPLICATION NUMBER: 09/876,348A  
C--> 11 <141> CURRENT FILING DATE: 2001-08-09  
13 <150> PRIOR APPLICATION NUMBER: 60/210,446  
14 <151> PRIOR FILING DATE: 2000-06-08  
16 <160> NUMBER OF SEQ ID NOS: 48  
18 <170> SOFTWARE: Microsoft Word  
20 <210> SEQ ID NO: 1  
21 <211> LENGTH: 19  
22 <212> TYPE: PRT  
23 <213> ORGANISM: Tenebrio molitor  
25 <223> OTHER INFORMATION: N-terminal sequence of protein Tm 12.86  
27 <400> SEQUENCE: 1  
28 Leu Thr Asp Glu Gln Ile Gln Lys Arg Asn Lys Ile Ser Lys Glu Cys  
29 1 5 10 15  
31 Gln Gln Val  
32 19  
34 <210> SEQ ID NO: 2  
35 <211> LENGTH: 576  
36 <212> TYPE: DNA  
37 <213> ORGANISM: Tenebrio molitor  
39 <223> OTHER INFORMATION: Non-his-tagged, signal plus, Tm 13.17  
41 <400> SEQUENCE: 2  
42 gtggatccaa agaattccgc acgagactac taag atg aag ttg ctc 46  
43 Met Lys Leu Leu  
44 -15  
46 tgt tgt cta atc tcc ctc att ctg ttg gtc aca gtt cag gcc ctg 91  
47 Cys Cys Leu Ile Ser Leu Ile Leu Leu Val Thr Val Gln Ala Leu  
48 -10 -5 1  
50 acc gag gca caa att gag aaa ctg aac aag atc agc aaa aaa tgt 136  
51 Thr Glu Ala Gln Ile Glu Lys Leu Asn Lys Ile Ser Lys Lys Cys  
52 5 10 15  
54 caa aat gaa agt gga gtg tcg caa gag atc ata acc aaa gct cgc 181  
55 Gln Asn Glu Ser Gly Val Ser Gln Glu Ile Ile Thr Lys Ala Arg  
56 20 25 30  
58 aac ggt gac tgg gag gac gat cct aaa ctg aaa cgc caa gtt ttt 226  
59 Asn Gly Asp Trp Glu Asp Asp Pro Lys Leu Lys Arg Gln Val Phe  
60 35 40 45  
62 tgc gtg gcc agg aac gcc ggt ctg gcc acg gaa tcg gga gag gtg 271  
63 Cys Val Ala Arg Asn Ala Gly Leu Ala Thr Glu Ser Gly Glu Val  
64 50 55 60  
66 gtg gtc gac gtg ttg agg gag aag gtg agg aag gtc act gac aac 316  
67 Val Val Asp Val Leu Arg Glu Lys Val Arg Lys Val Thr Asp Asn  
68 65 70 75

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70 gac gaa gaa act gag aaa atc atc aat aag tgc gcc gtc aag aga 361  
 71 Asp Glu Glu Thr Glu Lys Ile Ile Asn Lys Cys Ala Val Lys Arg  
 72 80 85 90  
 74 gat act gtt gaa gag acg gtg ttc aat act ttc aaa tgt gtc atg 406  
 75 Asp Thr Val Glu Glu Thr Val Phe Asn Thr Phe Lys Cys Val Met  
 76 95 100 105  
 78 aaa aac aag cca aag ttc tca cca gtt gat tga accaccacga 449  
 79 Lys Asn Lys Pro Lys Phe Ser Pro Val Asp  
 80 110 115  
 82 ctagtagatg gttcaaatgg tttgtttac atataaaaat aaagtgtttc 499  
 84 tttatgtaaaaa aaaaaaaaaa aaaaaaaaaa aactcgagag tattcttagag 549  
 86 cggccgcggg cccatcgttt tccaccc 576  
 89 <210> SEQ ID NO: 3  
 90 <211> LENGTH: 134  
 91 <212> TYPE: PRT  
 92 <213> ORGANISM: Tenebrio molitor  
 94 <223> OTHER INFORMATION: Precursor Protein for Tm 13.17  
 96 <400> SEQUENCE: 3  
 97 Met Lys Leu Leu Cys Cys Leu Ile Ser Leu Ile Leu Leu Val Thr Val  
 98 -15 -10 -5  
 100 Gln Ala Leu Thr Glu Ala Gln Ile Glu Lys Leu Asn Lys Ile Ser Lys  
 101 1 5 10  
 103 Lys Cys Gln Asn Glu Ser Gly Val Ser Gln Glu Ile Ile Thr Lys Ala  
 104 15 20 25 30  
 106 Arg Asn Gly Asp Trp Glu Asp Asp Pro Lys Leu Lys Arg Gln Val Phe  
 107 35 40 45  
 109 Cys Val Ala Arg Asn Ala Gly Leu Ala Thr Glu Ser Gly Glu Val Val  
 110 50 55 60  
 112 Val Asp Val Leu Arg Glu Lys Val Arg Lys Val Thr Asp Asn Asp Glu  
 113 65 70 75  
 115 Glu Thr Glu Lys Ile Ile Asn Lys Cys Ala Val Lys Arg Asp Thr Val  
 116 80 85 90  
 118 Glu Glu Thr Val Phe Asn Thr Phe Lys Cys Val Met Lys Asn Lys Pro  
 119 95 100 105 110  
 121 Lys Phe Ser Pro Val Asp  
 122 115  
 125 <210> SEQ ID NO: 4  
 126 <211> LENGTH: 116  
 127 <212> TYPE: PRT  
 128 <213> ORGANISM: Tenebrio molitor  
 130 <223> OTHER INFORMATION: Mature Protein for Tm 13.17  
 132 <400> SEQUENCE: 4  
 133 Leu Thr Glu Ala Gln Ile Glu Lys Leu Asn Lys Ile Ser Lys Lys Cys  
 134 1 5 10 15  
 136 Gln Asn Glu Ser Gly Val Ser Gln Glu Ile Ile Thr Lys Ala Arg Asn  
 137 20 25 30  
 139 Gly Asp Trp Glu Asp Asp Pro Lys Leu Lys Arg Gln Val Phe Cys Val  
 140 35 40 45  
 142 Ala Arg Asn Ala Gly Leu Ala Thr Glu Ser Gly Glu Val Val Val Asp

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|     |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
|-----|------------|--------------------|--|------------|------------|------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 143 | 50         | 55                 | 60                                     |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 145 | Val        | Leu                | Arg                                    | Glu        | Lys        | Val        | Arg        | Lys | Val | Thr | Asp | Asn | Asp | Glu | Glu | Thr |
| 146 | 65         |                    |  |            |            | 70         |            |     |     | 75  |     |     |     |     |     | 80  |
| 148 | Glu        | Lys                | Ile                                    | Ile        | Asn        | Lys        | Cys        | Ala | Val | Lys | Arg | Asp | Thr | Val | Glu | Glu |
| 149 |            |                    |  |            |            | 85         |            |     |     | 90  |     |     |     |     |     | 95  |
| 151 | Thr        | Val                | Phe                                    | Asn        | Thr        | Phe        | Lys        | Cys | Val | Met | Lys | Asn | Lys | Pro | Lys | Phe |
| 152 |            |                    |  |            |            | 100        |            |     |     | 105 |     |     |     |     |     | 110 |
| 154 | Ser        | Pro                | Val                                    | Asp        |            |            |            |     |     |     |     |     |     |     |     |     |
| 155 |            |                    |  |            | 115        |            |            |     |     |     |     |     |     |     |     |     |
| 158 | <210>      | SEQ                | ID                                     | NO:        | 5          |            |            |     |     |     |     |     |     |     |     |     |
| 159 | <211>      | LENGTH:            | 481                                    |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 160 | <212>      | TYPE:              | DNA                                    |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 161 | <213>      | ORGANISM:          | Tenebrio molitor                       |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 163 | <223>      | OTHER INFORMATION: | Non-His-tagged, Signal plus, Clone 2.2 |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 165 | <400>      | SEQUENCE:          | 5                                      |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 166 | ggcacgagca | aaa                | atg                                    | aaa        | ctc        | ctc        | ttg        | tgc | ttt | gct | ttc | gcc | gcc |     | 46  |     |
| 167 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 168 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 170 | atc        | gtc                | atc                                    | gga        | gct        | cag        | gct        | ctc | acc | gac | gaa | cag | ata | cag | aaa | 91  |
| 171 | Ile        | Val                | Ile                                    | Gly        | Ala        | Gln        | Ala        | Leu | Thr | Asp | Glu | Gln | Ile | Gln | Lys |     |
| 172 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 174 | agg        | aac                | aag                                    | atc        | agc        | aaa        | gaa        | tgc | cag | cag | gtg | tcc | gga | gtg | tcc | 136 |
| 175 | Arg        | Asn                | Lys                                    | Ile        | Ser        | Lys        | Glu        | Cys | Gln | Gln | Val | Ser | Gly | Val | Ser |     |
| 176 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 178 | caa        | gag                | acg                                    | atc        | gac        | aaa        | gtc        | cgc | aca | ggt | gtc | ttg | gtc | gat | gat | 181 |
| 179 | Gln        | Glu                | Thr                                    | Ile        | Asp        | Lys        | Val        | Arg | Thr | Gly | Val | Leu | Val | Asp | Asp |     |
| 180 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 182 | ccc        | aaa                | atg                                    | aag        | aag        | cac        | gtc        | ctc | tgc | ttc | tcg | aag | aaa | act | gga | 226 |
| 183 | Pro        | Lys                | Met                                    | Lys        | Lys        | His        | Val        | Leu | Cys | Phe | Ser | Lys | Lys | Thr | Gly |     |
| 184 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 186 | gtg        | gca                | acc                                    | gaa        | gcc        | gga        | gac        | acc | aat | gtg | gag | gta | ctc | aaa | gcc | 271 |
| 187 | Val        | Ala                | Thr                                    | Glu        | Ala        | Gly        | Asp        | Thr | Asn | Val | Glu | Val | Leu | Lys | Ala |     |
| 188 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 190 | aag        | ctg                | aag                                    | cat        | gtg        | gcc        | agc        | gac | gaa | gag | gtg | gac | aag | atc | gtg | 316 |
| 191 | Lys        | Leu                | Lys                                    | His        | Val        | Ala        | Ser        | Asp | Glu | Glu | Val | Asp | Lys | Ile | Val |     |
| 192 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 194 | cag        | aag                | tgc                                    | gtg        | gtc        | aag        | aag        | gcc | aca | cca | gag | gaa | acg | gct | tat | 361 |
| 195 | Gln        | Lys                | Cys                                    | Val        | Val        | Lys        | Lys        | Ala | Thr | Pro | Glu | Glu | Thr | Ala | Tyr |     |
| 196 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 198 | gac        | acc                | ttc                                    | aag        | tgt        | att        | tac        | gac | agt | aaa | cct | gat | ttc | tct | cct | 406 |
| 199 | Asp        | Thr                | Phe                                    | Lys        | Cys        | Ile        | Tyr        | Asp | Ser | Lys | Pro | Asp | Phe | Ser | Pro |     |
| 200 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 202 | att        | gat                | taa                                    | ttgtttgtta | tttgactgaa | ttttgacaat | aaaggtaata |     |     |     |     |     |     |     |     | 455 |
| 203 | Ile        | Asp                |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 204 |            |                    |  |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 206 | tcgttatgta | aaaaaaaaaaaa       | aaaaaaaaaaaa                           |            |            |            |            |     |     |     |     |     |     |     |     | 481 |
| 209 | <210>      | SEQ                | ID                                     | NO:        | 6          |            |            |     |     |     |     |     |     |     |     |     |
| 210 | <211>      | LENGTH:            | 482                                    |            |            |            |            |     |     |     |     |     |     |     |     |     |
| 211 | <212>      | TYPE:              | DNA                                    |            |            |            |            |     |     |     |     |     |     |     |     |     |

## RAW SEQUENCE LISTING

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DATE: 08/15/2001

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Input Set : A:\Rb125seq.txt

Output Set: N:\CRF3\08152001\I876348A.raw

212 <213> ORGANISM: *Tenebrio molitor*  
 214 <223> OTHER INFORMATION: Non-His-tagged, Signal plus, Clone 2.3  
 216 <400> SEQUENCE: 6  
 217 ggcacgagca aaa atg aaa ctc ctc ttg tgc ttt gct ttc gcc gcc 46  
 218 Met Lys Leu Leu Leu Cys Phe Ala Phe Ala Ala  
 219 -15 -10  
 221 atc gtc atc gga gct cag gct ctc acc gac gaa cag ata cag aaa 91  
 222 Ile Val Ile Gly Ala Gln Ala Leu Thr Asp Glu Gln Ile Gln Lys  
 223 -5 1 5  
 225 agg aac aag atc agc aaa gaa tgc cag cag gtg tcc gga gtg tcc 136  
 226 Arg Asn Lys Ile Ser Lys Glu Cys Gln Gln Val Ser Gly Val Ser  
 227 10 15 20  
 229 caa gag acg atc gac aaa gtc cgc aca ggt gtc ttg gtc gac gat 181  
 230 Gln Glu Thr Ile Asp Lys Val Arg Thr Gly Val Leu Val Asp Asp  
 231 25 30 35  
 233 ccc aaa atg aag aag cac gtc ctc tgc ttc tcg aag aaa act gga 226  
 234 Pro Lys Met Lys Lys His Val Leu Cys Phe Ser Lys Lys Thr Gly  
 235 40 45 50  
 237 gtg gca acc gaa gcc gga gac acc aat gtg gag gta ctc aaa gcc 271  
 238 Val Ala Thr Glu Ala Gly Asp Thr Asn Val Glu Val Leu Lys Ala  
 239 55 60 65  
 241 aag ctg aag cat gtg gcc agc gac gaa gaa gtg gac aag atc gtg 316  
 242 Lys Leu Lys His Val Ala Ser Asp Glu Glu Val Asp Lys Ile Val  
 243 70 75 80  
 245 cag aag tgc gtg gtc aag aag gcc aca cca gag gaa acg gct tat 361  
 246 Gln Lys Cys Val Val Lys Lys Ala Thr Pro Glu Glu Thr Ala Tyr  
 247 85 90 95  
 249 gac acc ttc aag tgt att tac gac agt aaa cct gat ttc tct cct 406  
 250 Asp Thr Phe Lys Cys Ile Tyr Asp Ser Lys Pro Asp Phe Ser Pro  
 251 100 105 110  
 252 att gat taa ttgtttgtta ttgtactgaa ttttgacaat aaaggtacta 455  
 253 Ile Asp  
 254 115  
 256 tcgttatgaa aaaaaaaaaaaa aaaaaaaaa 482  
 259 <210> SEQ ID NO: 7  
 260 <211> LENGTH: 133  
 261 <212> TYPE: PRT  
 262 <213> ORGANISM: *Tenebrio molitor*  
 264 <223> OTHER INFORMATION: Precursor Protein for  $T_m$  12.84, Clones 2.2, 2.3, and 7.5  
 266 <400> SEQUENCE: 7  
 267 Met Lys Leu Leu Leu Cys Phe Ala Phe Ala Ala Ile Val Ile Gly Ala  
 268 -15 -10 -5  
 270 Gln Ala Leu Thr Asp Glu Gln Ile Gln Lys Arg Asn Lys Ile Ser Lys  
 271 1 5 10  
 273 Glu Cys Gln Gln Val Ser Gly Val Ser Gln Glu Thr Ile Asp Lys Val  
 274 15 20 25 30  
 276 Arg Thr Gly Val Leu Val Asp Asp Pro Lys Met Lys Lys His Val Leu  
 277 35 40 45  
 279 Cys Phe Ser Lys Lys Thr Gly Val Ala Thr Glu Ala Gly Asp Thr Asn

RAW SEQUENCE LISTING  
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Input Set : A:\Rb125seq.txt  
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280 50 55 60  
 282 Val Glu Val Leu Lys Ala Lys Leu Lys His Val Ala Ser Asp Glu Glu  
 283 65 70 75  
 285 Val Asp Lys Ile Val Gln Lys Cys Val Val Lys Lys Ala Thr Pro Glu  
 286 80 85 90  
 288 Glu Thr Ala Tyr Asp Thr Phe Lys Cys Ile Tyr Asp Ser Lys Pro Asp  
 289 95 100 105 110  
 291 Phe Ser Pro Ile Asp  
 292 115  
 295 <210> SEQ ID NO: 8  
 296 <211> LENGTH: 115  
 297 <212> TYPE: PRT  
 298 <213> ORGANISM: Tenebrio molitor  
 300 <223> OTHER INFORMATION: Mature Protein for Tm 12.84, Clones 2.2, 2.3, and 7.5  
 302 <400> SEQUENCE: 8  
 303 Leu Thr Asp Glu Gln Ile Gln Lys Arg Asn Lys Ile Ser Lys Glu Cys  
 304 1 5 10 15  
 306 Gln Gln Val Ser Gly Val Ser Gln Glu Thr Ile Asp Lys Val Arg Thr  
 307 20 25 30  
 309 Gly Val Leu Val Asp Asp Pro Lys Met Lys Lys His Val Leu Cys Phe  
 310 35 40 45  
 312 Ser Lys Lys Thr Gly Val Ala Thr Glu Ala Gly Asp Thr Asn Val Glu  
 313 50 55 60  
 315 Val Leu Lys Ala Lys Leu Lys His Val Ala Ser Asp Glu Glu Val Asp  
 316 65 70 75 80  
 318 Lys Ile Val Gln Lys Cys Val Val Lys Lys Ala Thr Pro Glu Glu Thr  
 319 85 90 95  
 321 Ala Tyr Asp Thr Phe Lys Cys Ile Tyr Asp Ser Lys Pro Asp Phe Ser  
 322 100 105 110  
 324 Pro Ile Asp  
 325 115  
 328 <210> SEQ ID NO: 9  
 329 <211> LENGTH: 481  
 330 <212> TYPE: DNA  
 331 <213> ORGANISM: Tenebrio molitor  
 333 <223> OTHER INFORMATION: Non-His-tagged, Signal plus, Clone 3.4  
 335 <400> SEQUENCE: 9  
 336 ggcacgagca aaa atg aaa ctc ctc ttg tgc ttt gct ttc gcc gcc 46  
 337 Met Lys Leu Leu Cys Phe Ala Phe Ala Ala  
 338 -15 -10  
 340 atc gtc atc gga gct cag gtc acc gac gaa cag ata cag aaa 91  
 341 Ile Val Ile Gly Ala Gln Ala Leu Thr Asp Glu Gln Ile Gln Lys  
 342 -5 1 5  
 344 agg aac aag atc agc aaa gaa tgc cag cag gtg tcc gga gtg tcc 136  
 345 Arg Asn Lys Ile Ser Lys Glu Cys Gln Gln Val Ser Gly Val Ser  
 346 10 15 20  
 348 caa gag acg atc gac aaa gtc cgc aca ggt gtc ttg gtc gac gat 181  
 349 Gln Glu Thr Ile Asp Lys Val Arg Thr Gly Val Leu Val Asp Asp  
 350 25 30 35

Please Note:  
 Use of n and/or Xaa have been detected in the Sequence Listing. Please review the  
 Sequence Listing to ensure that a corresponding explanation is presented in the <220> to  
 <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY  
PATENT APPLICATION: US/09/876,348A

DATE: 08/15/2001  
TIME: 14:16:17

Input Set : A:\Rbl25seq.txt  
Output Set: N:\CRF3\08152001\I876348A.raw

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:1880 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44  
L:1888 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44  
L:1889 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44  
L:1912 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44  
L:1913 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44  
L:1916 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44  
L:1920 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44  
L:1934 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1935 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1938 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1939 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1942 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1946 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1950 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1954 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1958 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1962 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1966 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1970 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1974 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45  
L:1989 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:1993 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:1997 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2001 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2005 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2009 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2013 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2017 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2021 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2025 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2029 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46  
L:2044 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2048 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2052 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2056 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2060 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2064 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2068 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2072 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2076 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2080 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2084 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47  
L:2099 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48  
L:2102 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48  
L:2105 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48  
L:2108 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48  
L:2111 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48

**VERIFICATION SUMMARY**

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L:2114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48

L:2117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48

L:2120 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48